FLIP-CHIP LIGHT EMITTING DIODE

Abstract

A flip chip light emitting diode die **(10, 10', 10")** includes a light-transmissive substrate **(12, 12', 12")** and semiconductor layers **(14, 14', 14")** that are selectively patterned to define a device mesa **(30, 30', 30")**. A reflective electrode **(34, 34', 34")** is disposed on the device mesa **(30, 30', 30")**. The reflective electrode **(34, 34', 34")** includes a light-transmissive insulating grid **(42, 42', 60, 80)** disposed over the device mesa **(30, 30', 30")**, an ohmic material **(44, 44', 44", 62)** disposed at openings of the insulating grid **(42, 42', 60, 80)** and making ohmic contact with the device mesa **(30, 30', 30")**, and an electrically conductive reflective film **(46, 46', 46")** disposed over the insulating grid **(42, 42', 60, 80)** and the ohmic material **(44, 44', 44", 62)**. The electrically conductive reflective film **(46, 46', 46")** electrically communicates with the ohmic material **(44, 44', 44", 62)**.